

# **SPECIAL USE PERMIT APPLICATION**

Prepared by:

**Hashknife Energy Center LLC**  
1 S Wacker Drive, Suite 1800  
Chicago, Illinois 60606

Prepared for:

**Navajo County, Arizona**  
**Public Works Department**  
**Planning & Zoning**  
P.O Box 668  
100 East Code Talkers Drive  
Holrbook, AZ 86025

August 2019

# CONTENTS

<b>1.0 SUBMISSION SUMMARY .....</b>	<b>3</b>
<b>2.0 PROJECT NARRATIVE.....</b>	<b>5</b>
2.1 Introduction .....	5
2.2 General Facility Description, Design, and Operation.....	5
2.2.1 Project Location, Land Ownership, and Jurisdiction .....	5
2.2.2 Total Acreage and General Dimensions of All Facilities and Components .....	6
2.2.3 Power Plant Facilities .....	6
2.2.4 Typical Project Components .....	6
2.2.5 Temporary Construction Workspace, Yards, and Staging Areas .....	7
2.2.6 Ancillary Facilities .....	7
2.2.7 Water Usage and Sources (during Construction and Operations) .....	7
2.2.8 Erosion Control and Stormwater Drainage .....	8
2.2.9 Waste and Hazardous Materials Management .....	8
2.2.10 Fire Protection .....	8
2.2.11 Site Security and Fencing.....	8
2.2.12 Electrical Components, New Equipment, and Existing System Upgrades .....	9
2.2.13 Interconnection to Electrical Grid .....	9
2.2.14 Health and Safety Program.....	9
2.2.15 Decommissioning.....	10
2.2.16 Environmental Diligence.....	10
2.2.17 Cultural Surveys .....	11
2.2.18 Road Use Agreement.....	12
2.2.19 Public Outreach .....	12
2.3 Project Benefits .....	12
2.3.1 Economic Impact.....	12
2.4 Development Schedule.....	12

## Appendices

- Appendix A.** Completed Special Use Permit Application
- Appendix B.** Recorded Lease
- Appendix C.** Vicinity Map
- Appendix D.** Vicinity Site Plan
- Appendix E.** Conceptual Battery Storage Facility
- Appendix F.** Public Outreach

## 1.0 SUBMISSION SUMMARY

The following table summarizes the key Special Use Permit requirements and submission details:

Application Requirements	Submission Details
A complete conditional use permit application form	<ul style="list-style-type: none"> <li>• Included in <b>Appendix A</b>.</li> </ul>
A copy of the recorded deed or sales contract	<ul style="list-style-type: none"> <li>• Recorded Lease included in <b>Appendix B</b></li> </ul>
Two Copies of the Site Plan at 24" x 36" folded to approximately 9" x 12"	<ul style="list-style-type: none"> <li>• Included in <b>Appendix D</b></li> </ul>
Two copies of the site plan at 8.5" x 11"	<ul style="list-style-type: none"> <li>• Included in <b>Appendix D</b></li> </ul>
Two Copies of the Project Narrative	<ul style="list-style-type: none"> <li>• See <b>Section 2.0</b></li> </ul>
Two Copies of a Vicinity Map	<ul style="list-style-type: none"> <li>• See <b>Appendix C</b></li> </ul>

The following table provides an overview of key elements of the Application

SUP Element	Submission Details
Benefits to Navajo County	<ul style="list-style-type: none"> <li>• Please refer to <b>Section 2.3</b> of the Project Narrative for details on the project's benefits to Navajo County</li> </ul>
Viewshed Impacts on Neighbors	<ul style="list-style-type: none"> <li>• The closest residential neighbor is located approximately two miles from the project area and would have minimal sightline to the project area</li> </ul>
Compatibility with Adjacent Uses and Character of the Area	<ul style="list-style-type: none"> <li>• The Navajo County Comprehensive Use Plan designates the site as Range Land. The project is consistent with the goal under Section 2.2 of the Comprehensive Use Plan to enable access to incident solar energy for all character areas and will coexist with minimal intrusion on adjacent property.</li> </ul>
Structure Height	<ul style="list-style-type: none"> <li>• Six-foot tall solar modules using single-axis trackers mounted on approximately five-foot-tall steel posts</li> </ul>
Fencing Height	<ul style="list-style-type: none"> <li>• Six-foot-high chain-link fence topped with one-foot security barbed wire would be installed around facilities as they are constructed</li> </ul>
Site Access & Road Use Agreement	<ul style="list-style-type: none"> <li>• Please refer to <b>Section 2.2.18</b> for the Site Access route from the nearest US Highway. Upon receipt of a Special Use Permit for the Project and prior to commencing construction, Invenergy will work with the county to obtain all necessary road use agreements for site access.</li> </ul>
Decommissioning	<ul style="list-style-type: none"> <li>• Please refer to <b>Section 2.2.15</b> for the Project's Decommissioning Plan</li> </ul>
Zoning	<ul style="list-style-type: none"> <li>• The Project is sited on Parcels zone RU-1 and RU-20</li> </ul>

SUP Element	Submission Details
Compliance with Zoning Ordinance	<ul style="list-style-type: none"> <li>• Referenced throughout the application. Invenenergy will abide by all setback and height regulations as required under Articles 4 and 8 of the Navajo County Zoning Ordinance</li> </ul>
Cultural Findings	<ul style="list-style-type: none"> <li>• A Desktop Cultural Review of the Project site has been completed. Please refer to <b>Section 2.2.17</b> for more detail.</li> </ul>
Wildlife Corridors	<ul style="list-style-type: none"> <li>• Please refer to <b>Section 2.2.16</b></li> </ul>
Public Outreach	<ul style="list-style-type: none"> <li>• An Open House was held for the Project at the Joseph City Volunteer Fire Department on May 15, 2019. Please see <b>Appendix F</b> for details on materials presented.</li> </ul>

## **2.0 PROJECT NARRATIVE**

### **2.1 Introduction**

Pursuant to this application (“Application”), Hashknife Energy Center LLC (the “Applicant”) requests a Special Use Permit (“SUP”) from the Navajo County Planning & Zoning Commission (the “Commission”) for the construction and operation of the Hashknife Energy Center (the “Project”). The Project is a planned photovoltaic solar and storage energy facility, located south of Joseph City, in Navajo County, Arizona, on approximately 3,000 acres of state and private land. The Project is expected to produce up to approximately 400 MW of electricity, using ground-mounted photovoltaic solar panels. The Project would connect to the grid via a 3.5-mile generation tie line to the point of interconnection at the Cholla substation owned by Arizona Public Service.

Solar energy has proven to be successful in rural communities across Arizona, bringing new local jobs, additional revenue for landowners, and adding to the tax base to support schools and emergency response services. The project will generate over \$15,000,000 in property tax revenue through the life of the project and will support 200-400 jobs during construction and 3-5 full-time jobs during operations. In addition to economic benefits, the project will provide public health benefits through improved air and water quality.

Upon SUP approval by Navajo County, the Project would obtain all necessary building permits and undergo limited construction activities starting in November of 2019. The project is expected to be developed in phases and is currently expected to achieve full commercial operations by the end of 2022. Please note that this development schedule is conceptual and is subject to change.

### **2.2 General Facility Description, Design, and Operation**

#### ***2.2.1 Project Location, Land Ownership, and Jurisdiction***

The Project site is located south of Joseph City, in Navajo County, Arizona. Please see the vicinity map in Appendix B for both the private and state property under control by the Project. The Project area and the parcels immediately adjacent to it are zoned Rural Zoning District Twenty (“RU-20”) and Rural Zoning District One (“RU-1”). Under Section 402 of Article 4 in the Navajo County Zoning Ordinance, electric power generating plants and facilities like a solar project are a permitted special use within both RU-20 and RU-1.

The parcels within the project boundary as well as those immediately adjacent to it are currently used for rangeland or are vacant. The Navajo County Comprehensive Use Plan designates the site as Range Land. The project is consistent with the goal under Section 2.2 of the Comprehensive Use Plan to enable access to incident solar energy for all character areas and will coexist with minimal intrusion on adjacent property.

Solar projects are well suited for sunny, flat, rural areas and have minimal impact on nearby resources. The project will benefit from being sited near the Cholla Power Plant, an electrical substation. High voltage transmission lines also pass through the area, making this the ideal location for solar development. The closest residential neighbor is located approximately two miles from the project area and would have minimal sightline to the project area.

## **2.2.2 Total Acreage and General Dimensions of All Facilities and Components**

Within the 3,000-acre solar Project area boundary, the Project would have short-term disturbance effects during construction and lesser long-term disturbance effects during operations. It is anticipated that most of the Project area would be developed, and that any disturbed area that is not needed for operations would be reclaimed. A preliminary conceptual site plan is included in Appendix D. An ALTA survey has been completed and will guide further refinement of the site layout as design proceeds, including the location of any structures or facilities with respect to the county-designated major utility corridors that pass-through portions of the site. Under the current conceptual site layout, no facilities are shown within what Applicant understands to be the County's designated major utility corridors, although it is likely that internal access roads, underground lines or other similar facilities may need to cross the corridors, which would require crossing agreements from existing utility facilities. The locations of any such facilities will be defined in construction permits for the project. To the extent the Commission were to determine that any such facilities would conflict with the purpose(s) of the corridor, the site plan would be adjusted to avoid the conflict.

## **2.2.3 Power Plant Facilities**

The Project would generate up to approximately 400 MW of electricity using multiple arrays of single axis tracking photovoltaic solar panels connected to electrical infrastructure and transmitted to the interconnection point at Cholla substation at the Arizona Public Service owned Cholla Power Plant.

Solar panels generate electricity using the photoelectric effect, whereby the cells that compose the panel receive the sun's radiation in the form of photons and release electrons into the conduction band. The capture of these free electrons produces an electrical current that can be collected and supplied to the electrical power grid.

As the utility load profile continually changes with supply and demand, Battery Energy Storage Systems (BESS) are needed to meet the task of making sure the energy being used matches the energy being generated and are being utilized to offset peak energy needs through storage. For example, the Project's solar component typically produces the most energy in the middle of the day. However, for residential locations, the highest usage of energy is in the evening when everyone gets home from work. The BESS will allow the Project to take the large amount of solar energy generated during the middle of the day and discharge it in the evening to meet the evening load requirements.

## **2.2.4 Typical Project Components**

Materials have not yet been procured nor have final decisions been made on specific manufacturers or designs. However, for planning purposes, a preliminary layout has been developed and the Project will generally consist of the following:

- Six-foot tall solar modules using single-axis trackers mounted on approximately five-foot-tall steel posts;
- Operations facilities including O&M building, control building, energy storage buildings, storage yard and parking areas;
- interior access roads and a perimeter road;
- inverters and collection system not to exceed 15 feet in height;
- a collector substation;

- security fencing;
- a temporary construction laydown yard;
- distribution line for construction and operation power; and
- 500 kV generation-tie line or bus connection

### **2.2.5 Temporary Construction Workspace, Yards, and Staging Areas**

A laydown yard for staging and storage during construction is currently planned to be located on the south end of the Project site. The final location may be adjusted to facilitate efficient construction. In addition to providing a temporary storage space for equipment and vehicles during construction, the laydown yard would be used to house temporary office trailers during construction for Project management purposes. Portable toilets would be used by construction workers and visitors.

### **2.2.6 Ancillary Facilities**

The Project would have an operations and maintenance (“O&M”) building and a control house (“Operations Facilities”). The O&M building would house maintenance staff workspace, equipment, and documents. The control house would store protective relay and communications equipment. The O&M building and control house are currently planned to be approximately 1,200 square feet each. The Operations Facilities would have fire and safety equipment such as smoke detectors, fire extinguishers, and an eye-wash station. They would also be equipped with a heating and ventilation and air conditioning (“HVAC”) system.

The O&M building would utilize a septic system. Water for the septic system and minimal operations needs may utilize a well pending water rights availability and local permitting requirements. Alternatively, water may be brought in and stored in water tanks. Maintenance trucks and personal vehicles would park adjacent to the O&M building.

The energy storage facilities would be located adjacent to the Project collector substation and would look similar to the prototype represented in Appendix E with final design to be determined. All structures will comply with local building codes, including the maximum height allowance of thirty (30) feet under Section 404 of Article 4 in the Zoning Ordinance. Energy storage allows the Project to more efficiently serve customers by providing transmission and energy management services and improving the Project’s ability to more efficiently provide power to customers at various times as needed. Appendix E shows a typical drawing of an energy storage building.

Solar arrays and other structures will be sited consistent with applicable setbacks along the Project’s external property boundaries. Per Section 405 of Article 4 in the Zoning Ordinance, the project will abide by the front and rear yard setbacks of twenty (20) feet as well as the side yard setback of thirty (30) feet. Fencing will be installed along project boundaries in accordance with the relevant setbacks.

### **2.2.7 Water Usage and Sources (during Construction and Operations)**

Some water would be needed for site preparation and grading activities. During earthwork for the grading of access roads and other Project components, the main use of water is for compaction and dust control. Some water would be required for reclamation and for preparation of any concrete required for foundations. Construction water would be obtained offsite by lease or other agreement with the owners of existing

ground, surface or reuse water sources or water purveyors and, if necessary, approval of the state engineer would be obtained.

During operations, annual solar panel washings may be planned to increase the average optical transmittance of the flat panel surface. The O&M facilities will also utilize a minimal amount of water for general use including drinking, restrooms and general site and equipment maintenance. If O&M water cannot be developed at the site, it will be purchased, periodically hauled in, and stored in water tanks at the O&M building. A septic system, meeting county requirements, would be installed.

Offsite water for site preparation, grading, concrete, dust control, and panel washings would be brought by water trucks.

## **2.2.8 Erosion Control and Stormwater Drainage**

The Project design will include review of existing stormwater drainage patterns which will inform Project grading plans. There will be no imposed or additional impacts to the existing drainage corridor. Drainage that occurs on-site will be maintained in compliance with existing County regulations. Any erosion during construction would be controlled by implementing a Stormwater Pollution Prevention Plan (“SWPPP”), as required by the Arizona Department of Environmental Quality for the Construction Storm Water permit.

## **2.2.9 Waste and Hazardous Materials Management**

Locally generated trash during construction and operations would be hauled off-site for disposal. There are two main sources of hazardous materials: pad-mounted transformers and inverters. These hazardous materials would be managed in accordance with applicable state and federal regulations.

## **2.2.10 Fire Protection**

Vegetation in the Project area is sparse enough that the risk of wildfire is relatively low. The solar modules are designed to be resistant to fire and the racks are constructed of non-combustible steel and aluminum. The solar panels and other electrical equipment would meet applicable Underwriters Laboratories and International Electrotechnical Commission (“IEC”) ratings for their resistance to fire. Specifically, the modules are IEC 61730 certified, which requires tests to assess the potential fire hazard due to operation of a module or failure of its components. Tests are conducted associated with temperature, hot spots, fire resistance bypass diode thermal, and reverse current overload in order to certify the panels.

Access roads within the Project area would be approximately 16 to 20 feet wide and would be designed to ensure fire and emergency vehicle access to the Project, consistent with county requirements. Invenergy has proactively engaged the Joseph City fire department to develop an Emergency Response Plan. Invenergy will continue to work with the local fire department as well as Navajo County to ensure the Project’s compliance with applicable fire safety regulations.

## **2.2.11 Site Security and Fencing**

An approximately six-foot-high chain-link fence topped with one-foot security barbed wire would be installed around facilities as they are constructed, and access to the site would be controlled by gates. High-voltage equipment would be separately fenced with warning signage. Motion-activated lighting would be installed on the control enclosure, on the access gate(s), and throughout the solar arrays for access during non-daylight hours. All lighting would be designed to be downward facing and minimize impacts on nearby properties. A motion-activated security camera system would be installed with the lighting to monitor the

collector substation, control enclosure, and the solar arrays. During construction, temporary lighting facilities may be used if necessary.

### **2.2.12 Electrical Components, New Equipment, and Existing System Upgrades**

Solar modules are connected in series to form strings, and electricity from these strings is aggregated in combiner boxes. A single circuit then leaves each combiner box, which is installed underground and connects to the inverter.

The current produced by solar modules is in the form of direct current (“DC”). In order to be sent to the electrical grid, the DC current must be converted into alternating current (“AC”) power, and inverters serve this function. The conversion is accomplished by rapidly switching the DC power supplied by the panels. By varying the length of time that the switch is on, as well as the polarity, the positive and negative swells of an AC wave are created. This waveform is then smoothed with an output filter. Inverters employ several advanced control systems, switching algorithms, and ancillary services for both the input and output stages. For the input stage, the inverters can manipulate the DC voltage to ensure maximum power is harvested from the panels at the current irradiance and temperature levels on site, and on the output various sensors ensure that AC power production is in accordance with regulatory requirements. Inverters are designed to fully comply with the applicable requirements of the Institute of Electrical and Electronics Engineers (“IEEE”) standards, and any other requirements from the Authority Having Jurisdiction (“AHJ”).

The inverter AC output voltage would then be stepped up to a higher voltage using pad-mounted transformers located next to the inverter. Underground AC collection cables would connect the electrical output of each inverter and aggregate them together at the Project collector substation as further explained below.

At the Project collector substation, the voltage would again be stepped up in order to connect to the grid. The collector substation would include protective relay, metering equipment, and transformer to provide power to the collector substation service load and the control enclosure that houses these relays and other auxiliary equipment.

The power output would then flow through the 500-kV isolation switch at the Project collector substation onto a 500-kV line or busbar to the point of interconnection.

### **2.2.13 Interconnection to Electrical Grid**

The 500-kV line will connect the Project collector substation to the Cholla substation. The interconnection component of the Project is planned to be an above-ground line on poles approximately 110 feet tall. The current conceptual site plan includes two potential transmission corridors. Invenegy will permit the Project’s generation tie line through the Arizona Corporation Commission. The final design of the Project’s interconnection facilities will be determined based on electrical and engineering requirements and in consultation with the transmission system owner.

### **2.2.14 Health and Safety Program**

Across the entire fleet of wind, solar, storage, and thermal plants, Invenegy commits safety to corporate culture. Invenegy benchmarks and incentivizes compliance across the project sites as well as our corporate team using several leading safety indicator metrics, ranging from daily safety meetings, peer-to-peer safety observations, site safety drills, and submissions of monthly safety suggestions/site improvements. Our dedicated safety department works closely with our site safety representatives at every project to ensure

best practices are being shared and followed across our fleet. The progressive and open safety culture we have cultivated throughout our organization has resulted in high consistency of near-miss and incident reporting, which has allowed for a robust program of lessons learned being disseminated across our project sites.

As part of site and regional manager yearly requirements, sites perform quarterly safety trainings and yearly safety drills in collaboration with local first responders such as the fire department. Invenergy is committed to training not just our in-house or contracted technicians, but also the surrounding community to ensure transparency and educate on safety practices. Each site develops an emergency response and evacuation plan and signage is posted to warn and protect against any risk that exists in the system.

Invenergy is committed to proactive safety measures. Remote monitoring and control from Chicago's 24/7/365 manned Invenergy Control Center (ICC) allows for critical alarm and warning alerts to be addressed real-time. For the project's battery storage component, Invenergy currently has over 4,000 data points per MWh for our 65MW of existing projects that are viewable and accessible from Chicago to ensure all energy storage systems are performing as expected and indicate any anomalies that come up. Gas, heat, and smoke detector indicators, as well as voltage, state of charge, and battery heat sensors are constantly monitored. Local site personnel and Chicago engineers are on call 24/7 and are alerted by ICC operators based on a safety plan developed during construction and commissioning. If any thermal event is unable to be prevented, Invenergy utilizes aerosol or gaseous fire suppressants to absorb heat and inhibit fire chain reactions. These same suppressants are used everywhere from nursing homes to elevator rooms to army applications and are industry standard in Europe. Invenergy partners with contractors and suppression suppliers to ensure proper design and coverage for any thermal event in a battery enclosure.

### **2.2.15 Decommissioning**

At the end of commercial operation and upon termination of the lease and easement agreements involved, the Project will be responsible for removing the above-ground and under-ground solar facilities to a depth of thirty-six inches (36"). Decommissioning of the Project at the end of its anticipated 35-year useful life or any extension thereof will include removing the solar facilities, including the solar arrays, inverters, transformers, electrical cabling and collection system, fencing, foundations, pilings, lighting, buildings and access roads from the Project Area. The fence, underground cables, access roads and/or support buildings may remain in place if approved by the property owner and screened from view as required by the relevant County ordinance. Standard decommissioning practices will be utilized, including dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements, followed by restoration of the site. This undertaking will include restoring the property hosting the Project to soil suitable for range land use and reseeded the property to promote native vegetation.

### **2.2.16 Environmental Diligence**

In the absence of federal guidance for solar development, the Project is currently being developed following the tiered framework outlined in the U.S. Fish and Wildlife Service's (USFWS's) Land-based Wind Energy Guidelines<sup>1</sup> as well as the Arizona Game and Fish Department (AGFD) Guidelines for Solar Development

---

<sup>1</sup> U.S. Fish and Wildlife Service (USFWS). 2012. *U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines*. Available at: [http://www.fws.gov/windenergy/docs/WEG\\_final.pdf](http://www.fws.gov/windenergy/docs/WEG_final.pdf). Accessed April 5, 2019.

in Arizona.<sup>2</sup> As part of the “tiered approach” adopted in the WEG, Invenery conducted pre-construction surveys to assess the wildlife and habitat resources within the Project area. Pre-construction surveys included a Tier 1 and 2 Site Characterization Study (SCS) and a Wetland Delineation. The dominant vegetation occurring within the Project area is Inter-Mountain Basins Semi-Desert Grassland and results of the SCS determine there is a low likelihood of federally listed species to utilize the Project area.

Invenery met with AGFD on May 15, 2019 to discuss the project and the results of the SCS and the Wetland Delineation. The results of the SCS determined that the habitat within the Project is not well-suited for pronghorn. AGFD Habitat Evaluation and Lands Program Specialist for Region 1 stated that pronghorn densities are significantly lower within the Project area than south of the Project area. Large blocks of wildlife habitat would remain intact around the proposed Project area to accommodate terrestrial wildlife movements. Several ephemeral washes were observed during the Wetland Delineation; these washes will be accounted for during layout design and will be avoided to the greatest extent practicable. No additional surveys or recommendations were made by AGFD.

### **2.2.17 Cultural Surveys**

To determine previously recorded cultural resources (archeological sites, historic structures, cemeteries, etc.) that occur within or immediately adjacent to the Project Area and to determine what areas have been previously inventoried, Class I records searches were conducted with available data bases and appropriate file curation facilities. A background records search was conducted by the Arizona State Museum’s secure AZSITE database. This desktop review included:

- A cultural resource file search from AZSITE
- NPS-National Register of Historic Places (NRHP) database
- Arizona State Register of Historic Places (SRHP)
- General Land Office (GLO) Plat Maps
- Original Land Patent Data
- Cemetery location data
- The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Soil
- Survey Geographic Database

The background search of the data obtained from AZSITE and the other sources listed above indicates that the majority of the Study Area has never been surveyed for the presence of cultural resource materials. The search conducted identified three (3) previously recorded sites (one archaeological and two historic) within the Study Area. Site AZ P:3:1(ASM) is the Hashknife Ranch, which was listed as a historic site in 1961, the records show that site has never been formally surveyed or assessed for NRHP eligibility. Site AZ P:3:7(ASM) is an Ancestral Puebloan habitation and artifact scatter which was recorded in 1974 but was never evaluated for eligibility. Site AZ P:3:33(ASM), a Mormon fort at Obed was subjected to limited testing in 1995 by the Arizona Archaeological Society and was recommended to be eligible. The result of this research will be incorporated into the development and design of the Project. During the proposed construction activities, if any cultural resources are encountered, the project should temporarily cease at that location until a qualified archaeologist is contacted that can assess the significance of the findings.

---

<sup>2</sup> Arizona Game and Fish Department (AGFD). 2010. *Guidelines for Solar Development in Arizona*. Phoenix.

## **2.2.18 Road Use Agreement**

Primary access during construction from US Interstate 40 will run through Holbrook along W. Hopi Drive and south along Apache Ave. From Holbrook, vehicles will use E. Romero St. which turns into McLaws Rd. Site access from McLaws Rd. is anticipated to run north along Obed Rd. then East along the north side of T018N R019E Sections 32 & 33. Please note, this site access plan is preliminary and is subject to change with variances to site ingress and egress locations.

Upon receipt of a Special Use Permit for the Project and prior to commencing construction, Invenergy will work with the county to obtain all necessary road use agreements for site access.

## **2.2.19 Public Outreach**

An Open House was held for the Project at the Joseph City Volunteer Fire Department on May 15, 2019 per the recommendation of Public Works staff. Please see **Appendix F** for further detail about the public notice, materials and information presented as well as the attendee list for the Open House.

## **2.3 Project Benefits**

### **2.3.1 Economic Impact**

The Project will create a positive economic impact in Navajo County and the community. Over \$15,000,000 in property tax revenue would be collected over the life of the Project supporting county operations, schools, water districts, and fire protection.

During construction the Project is expected to employ an average of 200-400 employees, many of who will live, work, shop and eat in the surrounding area, increasing economic activity at local hotels, restaurants, gas stations and stores. Additionally, during operations the Project will create 3-5 full-time positions with strong and competitive salaries and benefits.

The Project would not cause an increase in the need for local services or infrastructure.

## **2.4 Development Schedule**

Please see below table for a preliminary schedule for the Project's major milestones. Please note that the development schedule is dependent upon the project receiving a contract for the energy generated by the project and is subject to change.

<b>Project Schedule</b>	
Navajo County Special Use Permit	September 2019
Construction Permits	September 2019
Limited Start of Construction	November 2019
State Power Line Siting Approval	Q2-Q4 2020
Major Construction	Q1 2022-Q3 2022
Start up and Commissioning	Q4 2022
Commercial Operations Date	Q4 2022

# Hashknife Energy Center LLC

## Special Use Permit Application – Navajo County Supplemental Information

### **1. Emergency Response Plan**

- a. Hashknife Energy Center LLC engaged Rusty Despain, Fire Chief at the Joseph City Fire Department, prior to the submittal of the Special Use Permit Application to begin developing an Emergency Response Plan. Mr. Despain noted that the Project site will be sited in unincorporated Navajo County and that the Joseph City Fire Department would not have jurisdiction over the Project. Mr. Despain said that he would defer to Navajo County for guidance on an emergency response plan for the site and suggested that Hashknife Energy Center LLC work with the County to develop a plan.

### **2. Visuals of Project**

- a. Please see attached images for images of Invenergy's 50MW Luning Solar Project in Nevada. The Hashknife Solar Project will feature modules and racking systems like those at Luning Solar and will look similar to the aerial photo once completed.

### **3. Size of Battery Energy Storage System**

- a. Hashknife Energy Center LLC is currently anticipating a Battery Energy Storage System (BESS) of 100 MW/400 MWh. The BESS will be sited on roughly 10 acres within the Project's fenced boundary. The final size of the storage facility in megawatts and acres is subject to change upon final engineering design and details would be provided in a building permit application.

### **4. Site Plan for Limited Construction Activities**

- a. Please see the attached revised site plan for the proposed location of the Limited Construction Activities. Please note that the location will be finalized when applying for building permits for Limited Construction Activities. Per the Special Use Permit application, Hashknife Energy Center LLC anticipates beginning Limited Construction Activities in November 2019 and would not begin full construction until a year prior to the contemplated Commercial Operations Date of Q4 2022.
- b. The Scope of Work for Limited Construction activities will include installing approximately twenty-one (21) 10'x40' inverter pile foundations. When completed, approximately 10,000 sq. feet (~.22 acres) of land will be covered by the inverter pile foundations, but the foundations will be spread out over approximately 500 acres.

### **5. Solar Panel Cleaning**

- a. Hashknife Energy Center LLC anticipates limited, if any, module washings. If washings are necessary, offsite water will be brought in by water trucks. Hashknife Energy Center LLC does not anticipate significant use of county water resources to operate the Project.

### **6. Highway Glare**

- a. At its nearest point, the Project will be located 1.35 miles from US Highway 40. Hashknife Energy Center LLC does not anticipate significant glare impacts on highway

traffic associated with the Project. Solar panels are designed to absorb light rather than reflect it and those used for the Project will be coated with a non-reflective cover.

**7. Building Permits**

- a. Hashknife Energy Center LLC will work with Navajo County to obtain all necessary building permits for the Project. Hashknife Energy Center LLC anticipates working with the county to obtain the necessary building permits for the Limited Construction Activities along with its Special Use Permit Application and prior to commencing the Limited Construction Activities in November 2019. Please note, these building permits will be limited in scope to just include Limited Construction Activities.

**8. Construction Period**

- a. Hashknife Energy Center LLC plans to request a 5-year construction period from the date of approval of the Special Use Permit.

**9. Vegetation Plan**

During Limited Construction Activities, no grading will be performed, and the scope of work should not affect local vegetation. Hashknife Energy Center LLC will implement a Vegetation Management Plan prior to start of construction.

**10. Arizona Game and Fish Department**

- a. Please see attached for a letter confirming Hashknife Energy Center LLC's meeting with Arizona Game and Fish.

**11. Sign Information – Company, Contact, High Voltage**

- a. Please see attached substation and high voltage sign imagery for an example of typical Hashknife Energy Center LLC signage around the project's perimeter and substation.

**12. Panel Setbacks within Fenced Perimeter**

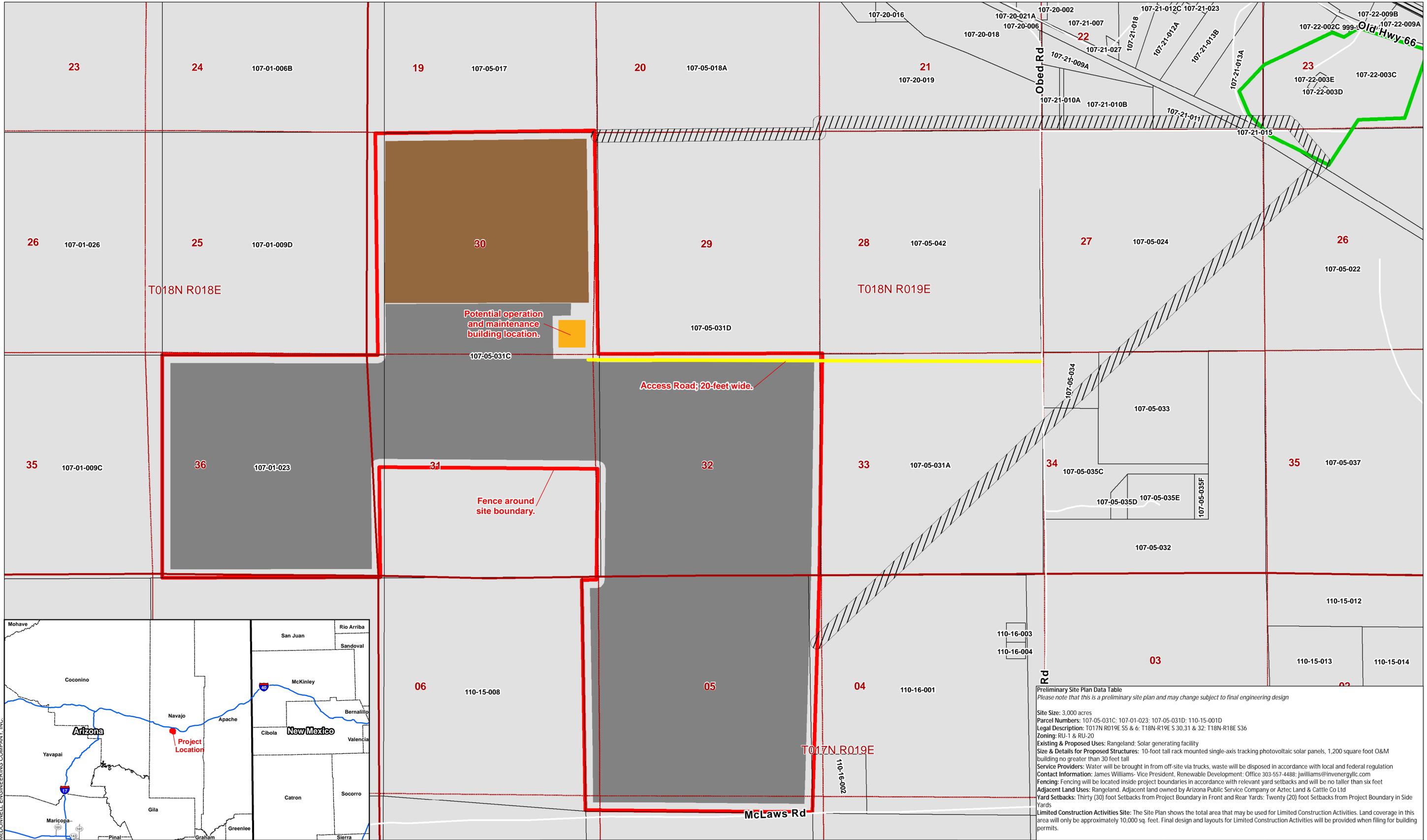
- a. Hashknife Energy Center LLC expects a minimum 10-foot setback from the fenced perimeter. Please note this may change with adjustments to the engineering design.

**13. Fencing around High Voltage Equipment**

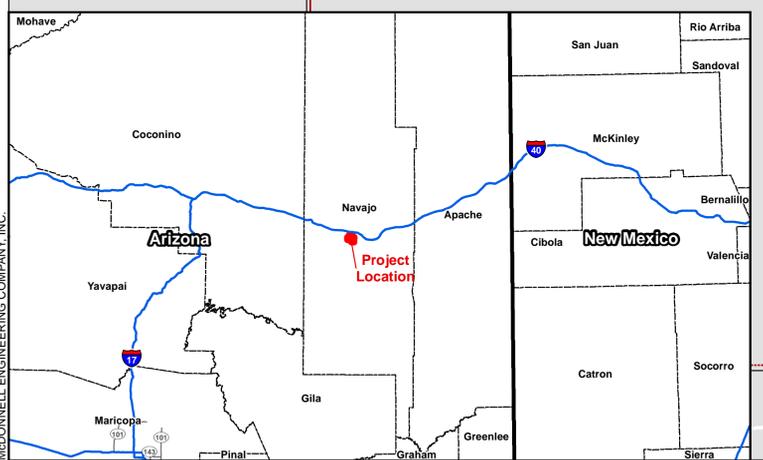
- a. The Hashknife Energy Center will have a fence around the perimeter of the site as well as a separate, individual fence around the project substation.







Path: Z:\Clients\EN\Inventory\15555\_HashknifeSolar\Studies\Geospatial\Drawings\Site\_Plan.mxd  
 Date: 9/12/2019  
 jaclaussen

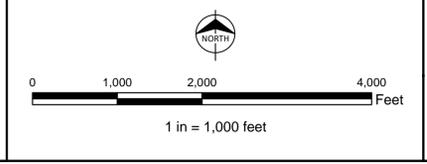


**Preliminary Site Plan Data Table**  
 Please note that this is a preliminary site plan and may change subject to final engineering design

Site Size: 3,000 acres  
 Parcel Numbers: 107-05-031C; 107-01-023; 107-05-031D; 110-15-001D  
 Legal Description: T017N R019E S5 & 6; T18N-R19E S 30,31 & 32; T18N-R18E S36  
 Zoning: RU-1 & RU-20  
 Existing & Proposed Uses: Rangeland; Solar generating facility  
 Size & Details for Proposed Structures: 10-foot tall rack mounted single-axis tracking photovoltaic solar panels, 1,200 square foot O&M building no greater than 30 feet tall  
 Service Providers: Water will be brought in from off-site via trucks, waste will be disposed in accordance with local and federal regulation  
 Contact Information: James Williams- Vice President, Renewable Development; Office 303-557-4488; jwilliams@invenergyllc.com  
 Fencing: Fencing will be located inside project boundaries in accordance with relevant yard setbacks and will be no taller than six feet  
 Adjacent Land Uses: Rangeland. Adjacent land owned by Arizona Public Service Company or Aztec Land & Cattle Co Ltd  
 Yard Setbacks: Thirty (30) foot Setbacks from Project Boundary in Front and Rear Yards; Twenty (20) foot Setbacks from Project Boundary in Side Yards  
 Limited Construction Activities Site: The Site Plan shows the total area that may be used for Limited Construction Activities. Land coverage in this area will only be approximately 10,000 sq. feet. Final design and layouts for Limited Construction Activities will be provided when filing for building permits.

Access Road	Solar Panel Area	Section
Hashknife Potential Project Boundary (2971.9 acres)	Potential Transmission Line Corridors	Parcels (APN Number)
Limited Construction Activities Site	Point of Interconnection - Cholla Substation	
Potential Operations & Maintenance Bldg.	Township and Range	

Owners Signature: _____ Printed: _____ Date: _____ Navajo County Planning Director: _____ Printed: _____ Date: _____ Navajo County Engineer: _____ Printed: _____ Date: _____	Chairman, Navajo County Planning Commission: _____ Printed: _____ Date: _____ Chairman, Navajo County Board of Supervisor: _____ Printed: _____ Date: _____
---	--



**Site Plan**  
 Hashknife Energy Center LLC  
 Navajo County  
 Joseph City, Arizona  
**Preliminary**

Source: ESRI, Navajo County, Burns & McDonnell Engineering Company, Inc.



September 11, 2019

Attn: Sandra Phillips, P.E., CFM  
Assistant County Engineer/Planning Manager  
Navajo County  
Planning and Zoning  
RE: Hashknife Energy Center Special Use Permit

**Re: Arizona Solar Energy Project Discussion; Hashknife Solar Energy Project**

Dear Ms. Philips,

The Arizona Game and Fish Department (Department) met with Invenergy on May 15, 2019 regarding the Hashknife Solar Energy Project in Navajo County. Based on this meeting, it is the Department's understanding Invenergy is proposing to construct a 300 MW DC Solar Farm on approximately 2,800 acres of land located on private and state lands. The project will be a photovoltaic solar facility which includes a Battery Energy Storage System and will connect to a 500kV generation tie line. Based on Invenergy's preliminary Tier 1 and Tier 2 review which included a site visit and habitat characterisation of the site, and the Department's knowledge of the site, there are no concerns for wildlife, including Wildlife Corridors, within this project location at this time.

Under Title 17 of the Arizona Revised Statutes, the Department, by and through the Arizona Game and Fish Commission (Commission), has jurisdictional authority and public trust responsibilities for management of the state's fish and wildlife resources. It is the mission of the Department to conserve Arizona's diverse fish and wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations. As such, the Department looks forward to continued coordination with Invernergy on this project as it develops. If you have any questions regarding this letter, please do not hesitate to contact me directly at [acavalcant@azgfd.gov](mailto:acavalcant@azgfd.gov) or 623-236-7222.

Sincerely,

A handwritten signature in black ink, appearing to read "Andrew Cavalcant".

Andrew Cavalcant  
Project Evaluation Specialist

M19-09091424

cc: Ginger Ritter, Project Evaluation Program Supervisor AGFD ([gritter@azgfd.gov](mailto:gritter@azgfd.gov))

**azgfd.gov | 602.942.3000**

**5000 W. CAREFREE HIGHWAY, PHOENIX AZ 85086**

**GOVERNOR:** DOUGLAS A. DUCEY **COMMISSIONERS:** CHAIRMAN, ERIC S. SPARKS, TUCSON | KURT R. DAVIS, PHOENIX  
LELAND S. "BILL" BRAKE, ELGIN | JAMES E. GOUGHNOUR, PAYSON | JAMES S. ZIELER, ST. JOHNS **DIRECTOR:** TY E. GRAY **DEPUTY DIRECTOR:** TOM P. FINLEY

Dave Dorum, Habitat Program Manager, Region I  
Jamie Wilson, Senior Associate, Invenergy (JWilson@invenergullc.com)

Here is the customized proof for your quote and order. Please reply to this email with your approval or any changes needed. Production can begin once your proof is approved and your order is placed.

**Order Information**

<b>RFP Number:</b>	<b>25183434_30</b>
Order Quantity:	15
Visibility	Single Sided
Material	Plastic
Surface	Non Reflective
Topcoat	Yes
Size	10"h x 14"w
Corners	Round (Standard)
Mounting Method	(4) Corner Holes
Add Foam Strips?	No
Border	Border Not Required
Customer Graphic Supplied?	No
Header Options	OSHA Danger (red)
Background Color	White
Letter Color	Black
Additional Color(s)	Red
Wording	see text
Designer	RK
Date	02/22/2018

**Special Instruction**

**Signature of Approval**

Thank you for paying special attention to your proof as we are unable to accept returns on customized products manufactured to your specifications.



**Never be caught out of stock again!**

More than 26,000 products to choose from. Go to [www.seton.com](http://www.seton.com) to learn more.

Here is the customized proof for your quote and order. Please reply to this email with your approval or any changes needed. Production can begin once your proof is approved and your order is placed.

### Order Information

**RFP Number:** 25183434\_20

Order Quantity: 15

Material: PLASTIC

Thickness:

Height\*: 18.0000 "

Width\*: 24.0000 "

Sign Reflectivity\*: Non - Reflective

Corners\*: Square

Shape\*: Rectangle

Mounting\*: (4) Corner Holes

Sign Design\*: Single Sided

Background Colors: WHITE

Copy Color: BLACK

Additional Copy Colors: GREEN

Enclosure: Add Topcoat

Designer: RK

Date: 02/22/2018

### Special Instruction

### Signature of Approval

Thank you for paying special attention to your proof as we are unable to accept returns on customized products manufactured to your specifications.

# Invenergy

**8CS-COOPER STREET SOLAR  
34.5-69 kV SUBSTATION**

**24 Cooper Street  
Shoreham, NY 11786  
Emergency Contact: 631-947-3003**

**Never be caught out of stock again!**

More than 26,000 products to choose from. Go to [www.seton.com](http://www.seton.com) to learn more.

## **APPENDIX A**

### **Completed Special Use Permit Application**

# **SPECIAL USE PERMIT APPLICATION**



## **NAVAJO COUNTY, ARIZONA PUBLIC WORKS DEPARTMENT PLANNING & ZONING**

**P.O. Box 668 ▪ 100 East Code Talkers Drive ▪ Holbrook, AZ 86025**

**Phone: (928) 524-4100 ▪ Fax: (928) 524-4122**

[www.navajocountyaz.gov](http://www.navajocountyaz.gov)

(Revised June 15, 2011)

# **SPECIAL USE PERMIT APPLICATION INSTRUCTIONS**

In applying for a **SPECIAL USE PERMIT**, the following is required of all applications:

1. Special Use Permit application (completed). All information requested on the application shall be complete, including ownership (which shall be legally notarized where indicated).
2. A copy of the recorded deed or sales contract.
3. Site Plan, as noted below:
  - 2 (two) copies of the site plan at 24" x 36" – folded to approximately 9" x 12"
  - 2 (two) copies of the site plan at 8-1/2" x 11"
  - Note that after initial review, staff may require additional copies, a different scale, and/or different paper sizes
  - Additional copies of the site plan and other application materials may be required prior to the Planning Commission and/or Board of Supervisors meetings

The site plan shall be drawn to a 50, 100, or 200 foot-to-the-inch scale, or an alternate scale if approved by the Planning Director and/or County Engineer, whichever is most appropriate to clearly present necessary details. At a minimum, the site plan shall include the following:

- Project name / title
- North arrow and scale
- Property lines with dimensions
- Location and dimensions of all existing or proposed structures
- Distances from structures to property lines, septic, and water well facilities
- All required yard setbacks from property lines and distances between buildings
- All existing and proposed ingress and egress (access) for the subject property, including the widths of all driveways
- Adjacent street names and right-of-way widths
- All interior drive and parking areas (including any handicapped-accessible parking). Include the proposed surfacing for these areas
- Site data table, which is to include the following:
  - Site size in acres
  - Address of the site
  - Assessor's Parcel Number(s) of the site
  - General Legal Description of the property (Township, Range and Section). If located within a platted subdivision, provide the subdivision name, lot number(s) and recording information (Book & Page)
  - Existing zoning of the site
  - Existing and proposed use(s)
  - Size & details for any proposed structures (type, size in square feet, height, etc.)
  - Parking (where needed) – indicate the number of spaces – both proposed &

- required (include handicapped-accessible spaces)
- Service providers – table format (water, method of sewage disposal, trash, fire, police, electric, gas, etc.). Note that “will serve” letters may be required
- Contact information (name, address, phone & e-mail) for the owner, developer, architect/engineer, owner’s representative and/or other persons
- Details and locations regarding proposed fencing/screening & signs
- Adjacent land uses, parcel numbers and ownership name
- Vicinity map
- Detention areas (where deemed necessary)
- Signature line for the owner’s signature and date (printed name underneath)
- “Approvals” signature block, including signature lines and dates for:
  - Navajo County Planning Director
  - Navajo County Engineer
  - Chairman, Navajo County Planning Commission
  - Chairman, Navajo County Board of Supervisors

Additional details and/or information may be required by staff after the initial review of the site plan and/or application materials.

4. A “Project Narrative” (2 copies), expressing your reasons for the proposed Special Use Permit and how it will be beneficial to the area, and including an explanation of the proposed use, a schedule for its development, and the compatibility of the proposed use with the adjacent uses and character of the area.
5. A “Vicinity Map” (2 copies), including a written and graphic description of how to access the site from the nearest State or Federal Highway. Include Latitude & Longitude of the “corners” of the site.
6. The correct Application Fee (see fee schedule) – payable to Navajo County.
7. Additional Materials (optional – not required). A CD (Compact Disk) of a copy of all of the application materials, scanned in PDF format, is suggested. Optional additional materials may also be submitted to better explain the proposed development. Although not required, these may include aerial photos, context plans, building elevations, landscape plans, letters of support, renderings, sign details, etc.

All application materials and other required information concerning a Special Use Permit must be submitted to the Planning & Zoning Division of the Public Works Department for review and staff approval prior to scheduling of any hearings before the Planning & Zoning Commission and/or the Board of Supervisors. The Planning & Zoning Commission meets the third Thursday of each month (6:00 p.m.), and the Board of Supervisors meets the second and fourth Tuesday’s of each month (9:00 a.m.) All hearings are held in the Board of Supervisors’ Chambers at the Navajo County Governmental Center in Holbrook, Arizona. Please confirm any hearings with staff, as dates, times and locations may change.

**Incomplete Applications Will Delay The Process –  
Please Follow The Instructions Carefully.**



# NAVAJO COUNTY PUBLIC WORKS DEPARTMENT

## PLANNING & ZONING

Post Office Box 668 - 100 East Code Talkers Drive

Holbrook, Arizona 86025

(928) 524-4100 FAX (928) 524-4122

[www.navajocountyaz.gov](http://www.navajocountyaz.gov)

## SPECIAL USE PERMIT APPLICATION

(also to be used for an Amendment to an approved/existing Special Use Permit)

### SITE & PROPOSAL INFORMATION:

PROJECT NAME: \_\_\_\_\_

PROPOSED USE OF PROPERTY: \_\_\_\_\_

SPECIAL USE CATEGORY: \_\_\_\_\_

LOCATION (include nearest town/community): \_\_\_\_\_

GENERAL DIRECTIONS TO PARCEL: \_\_\_\_\_

ADDRESS (if known): \_\_\_\_\_

PROPERTY SIZE: \_\_\_\_\_ acres; \_\_\_\_\_ square feet

LEGAL DESCRIPTION: Township \_\_\_\_\_ North, Range \_\_\_\_\_ East, Section(s) \_\_\_\_\_

ASSESSOR PARCEL NO.: \_\_\_\_\_

SUBDIVISION NAME: \_\_\_\_\_ LOT #: \_\_\_\_\_

PRESENT USE OF PROPERTY: \_\_\_\_\_

CURRENT ZONING: \_\_\_\_\_

PROPOSED ZONING: \_\_\_\_\_

### OWNER & CONTACT INFORMATION:

LEASEHOLDER NAME: \_\_\_\_\_

LEASEHOLDER PHONE NO.: \_\_\_\_\_ FAX #: \_\_\_\_\_

LEASEHOLDER EMAIL ADDRESS: \_\_\_\_\_

LEASEHOLDER MAILING ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_

DATE OF LEASE EXECUTION: \_\_\_\_\_

CONTACT NAME: \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_

CONTACT PHONE NO.: \_\_\_\_\_ FAX #: \_\_\_\_\_

CONTACT EMAIL ADDRESS: \_\_\_\_\_

CONTACT MAILING ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_



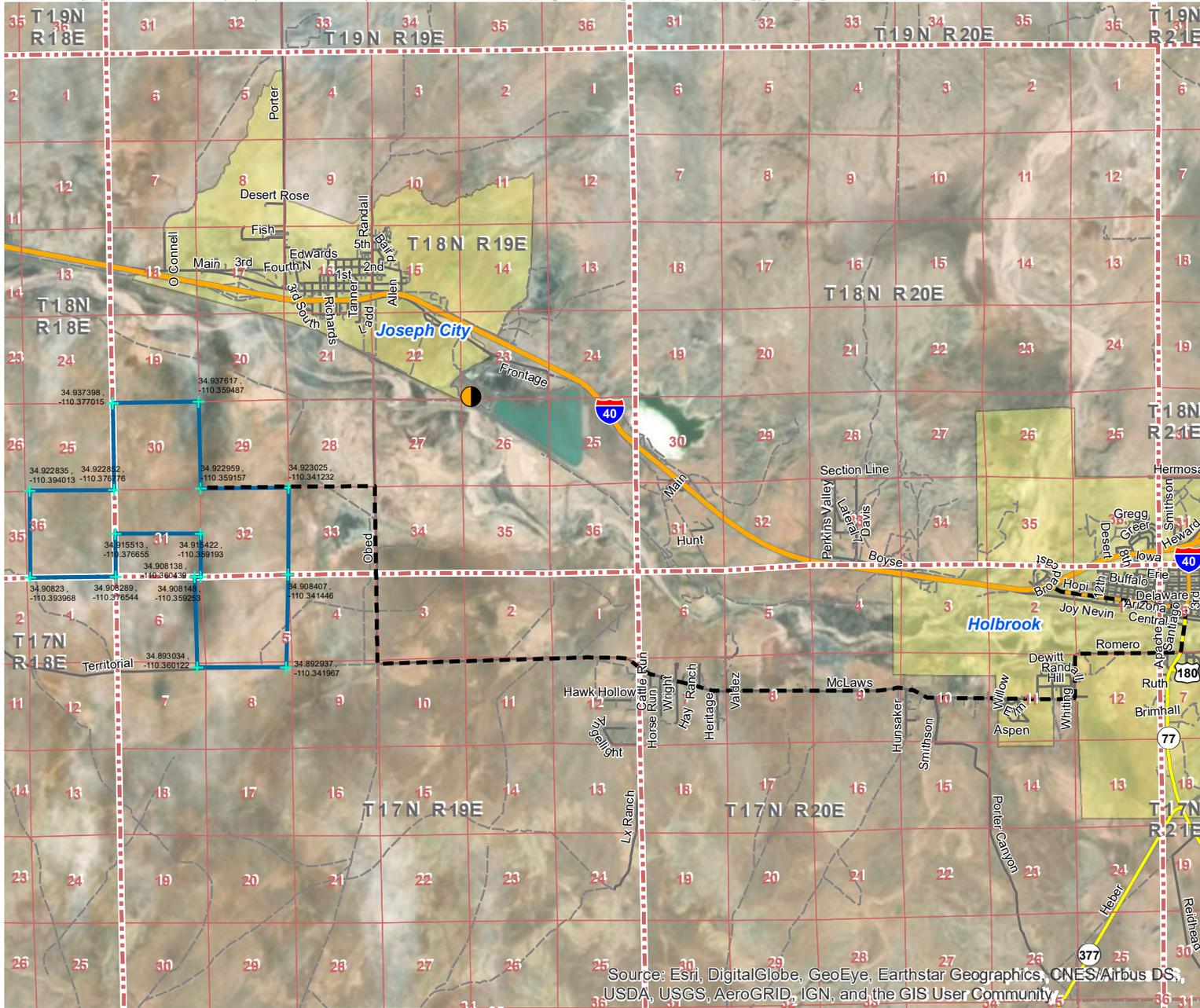


## **APPENDIX B**

### **Recorded Lease**

## **APPENDIX C**

### **Vicinity Map**



**Legend**

- + Project Corner
- Point of Interconnection
- Access Route
- Road Classification**
- Interstate Highway
- US/State Route
- Local Road
- Dirt/Unpaved Road
- Township/Range Boundary
- Section Line
- Project Area
- Town

Access to the Hashknife Project Site from US Interstate 40 will run through Holbrook along W. Hopi Drive and south along Apache Ave. From Holbrook, vehicles will use E. Romero St. which turns into McLaws Rd. Site access from McLaws Rd. is anticipated to run north along Obed Rd. then East along the north side of T018N R019E Sections 32 & 33. Please note, this site access plan is preliminary and is subject to change with variances to site ingress and egress locations.

7055 Feet from I-40 to closest project corner (34.937617, -110.359487)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

# Preliminary Vicinity Map

Hashknife Solar Energy Center | Navajo County, Arizona

Rev. 00

August 12, 2019



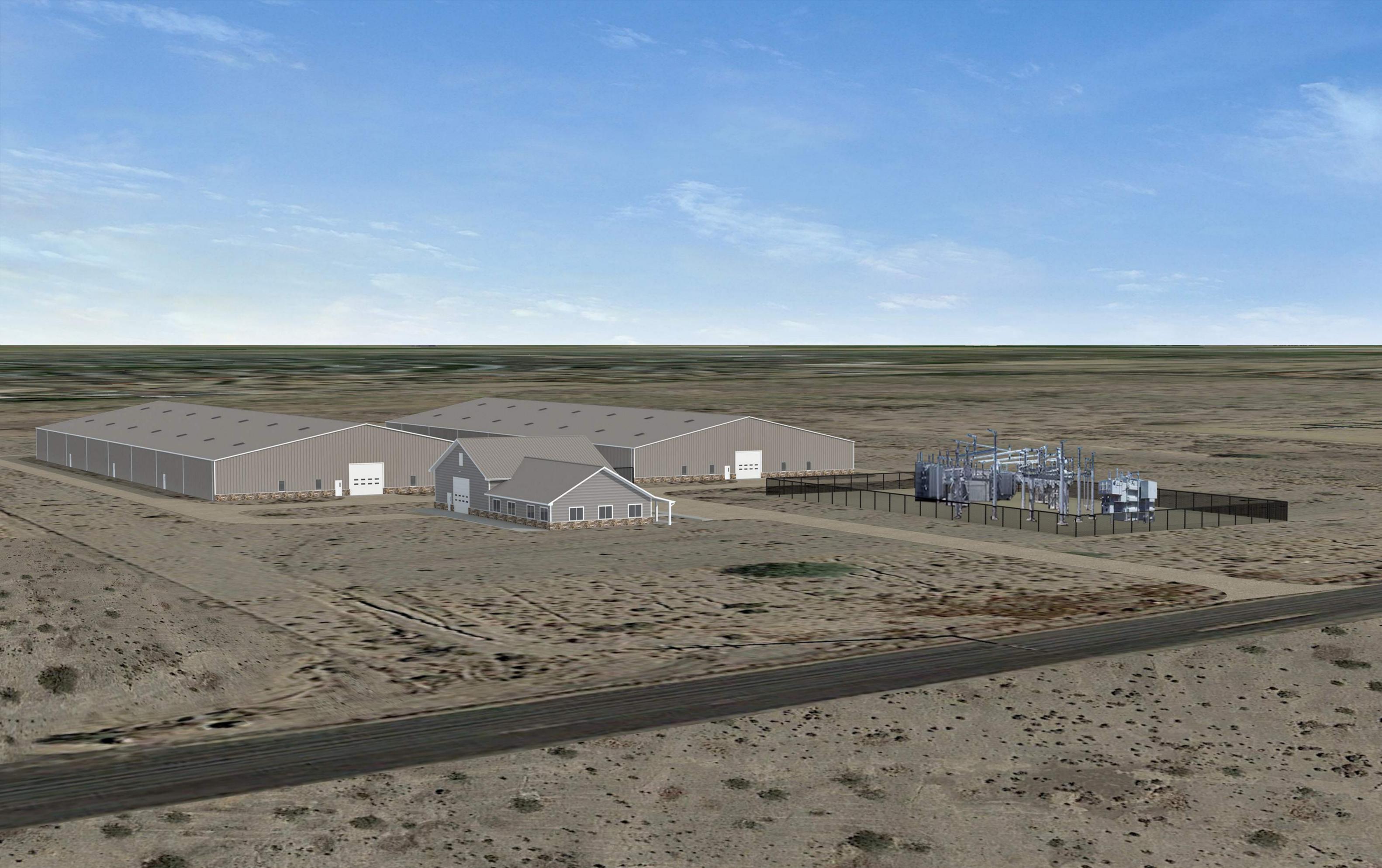
## **APPENDIX D**

### **Site Plan**



## **APPENDIX E**

### **Conceptual Energy Storage Facility**



## **APPENDIX F**

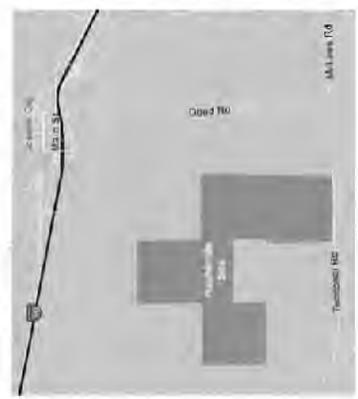
### **Public Outreach**

# Hashknife Solar Energy Center Invites You to a Public Open House

The Hashknife Solar Energy Center is a proposed 300 megawatt (MW) solar facility in Navajo County, AZ. This solar facility would provide enough renewable energy to power approximately 70,000 homes.

Invenergy, LLC invites the public to attend the open house to learn more about the project and ask questions of the project team.

All questions and comments are due by May 31, 2019.



Learn about the innovative photovoltaic technology



Understand the benefits to you & the community



Review preliminary plans



Ask questions & provide feedback



Wednesday, May 15, 2019  
6:00 - 8:00 p.m.

Joseph City Fire District  
4513 Main Street  
Joseph City, AZ 86032

For more information or to submit comments, contact:  
[Slinnis@invenergyllc.com](mailto:Slinnis@invenergyllc.com)

Invenergy | Innovators building a sustainable world

*Invenergy drives innovation in energy. Invenergy and its affiliated companies develop, own, and operate large-scale renewable and other sustainable energy generation and storage facilities in the Americas, Europe and Asia. Learn about Invenergy at [invenergyllc.com](http://invenergyllc.com).*





# Invenergy

## Hashknife Solar Energy Center Project

Open House: Wednesday, May 15, 2019 6:00-8:00 pm  
Joseph City Fire District

### Sign in

(please print)

Name/Company	Address (please include street, city and zip code)	Telephone # with area code and/or email address
J.R. DeSpain	Box 159 Joseph City	928-241-0399
PAUL WATSON	Box 2116 Pinetop	928-243-3137
Sandy Phillips	P.O. Box 668 Holbrook	928-524-4233
APS Neil Traver	2301 W 7 <sup>th</sup> Street Snowflake	480 262 6929
APS Brian Wallace	2200 E Huntington Dr	928 773 6306
Sandra James Brimhall	and Sarah 625 E Mora Pinetop	505 218 2863
Sindy DeSpain	7500 OBED Ranch	928-587-6062
land N of 40. Mary Hansen	JC 8108 S RICHARDS	850-209-0868
Ruth Hansen	8108 S Richards	850 209 7353
John O'good	100 Public Works Dr. Holbrook	928-524-4100
by APS plant Royce Hart	7820 Hunt Rd. Joseph City, AZ	928-386-6205

Mailing List for Open House Invitations

ADDRESS 1	ADDRESS 2	City
Arizona State Land Department	1616 W. Adams St.	Phoenix
	10265 West Camelback Rd. # 104	Phoenix
	10265 West Camelback Rd. # 104	Phoenix
	10265 West Camelback Rd. # 104	Phoenix
	4275 Old U.S. 66	Holbrook
	PO Box 774	Joseph City
	PO Box 104	Joseph City
	3610 Territorial Road	Wislow
	PO Box 66	Joseph City
	PO Box 220	Joseph City
	PO Box 502	Joseph City
	4504 1st North Ave	Joseph City
	4504 1st North Ave	Joseph City
	4497 1st North Ave	Joseph City
	PO Box 53	Joseph City
Navajo Office	Indian Rte 100	Window Rock
	PO Box 496	Joseph City
	PO Box 221	Joseph City
	4295 Frontage Rd	Joseph City
	6363 S. Fiddler's Green Circle #800	Greenwood Village
Lakeside Ranger District	2022 W White Mtn. Bl.	Lakeside
	319 W. Arizona Street	Holbrook
	5742 W. Lupine Avenue	Joseph City
	6140 S. Packard Avenue	Cudahy
	PO Box 2649	Snowflake
	1108 E. Geneva Street	Pearce
	PO Box A	Joseph City
	PO Box 53999 Ms 9565	Phoenix
	PO Box 4372	Houston
	PO Box 961089	Fort Worth
	PO Box 7207	Bedminster

State	Zip	OWNER
AZ	85007	STATE OF ARIZONA
AZ	85037	AZTEC EAST JEFFERS LLC
AZ	85037	AZTEC LAND & CATTLE CO LTD.
AZ	85037	AZTEC LAND COMPANY LLC
AZ	86025	NANCY L BAKER ESTATE
AZ	86032	LARRY E & AVA R BALDWIN
AZ	86032	DESPAINS LX RANCH LLC
AZ	86047	MARTIN & GWEN GILBERT (CPRS)
AZ	86032	DOYLE L & SONJA H HANSEN TRUST
AZ	86032	GALE & ANNA HANSEN (CPRS)
AZ	86032	GARY & RUTH HANSEN (CPRS)
AZ	86032	JOSEPH CITY SANITATION DISTRICT
AZ	86032	JOSEPH CITY UTILITIES
AZ	86032	JOSEPH CITY WATER SYSTEM INC
AZ	86032	ELDEN & CAROL LARSEN (CPRS)
AZ	86515	NAVAJO TRIBE
AZ	86032	WILLIAM J & ESTHER PATTERSON (JT)
AZ	86032	DORIS E. POGUE
		QUALITY READY MIX INC RINKER MATERIALS
AZ	86032	CORP
		SANTA FE PACIFIC RAILROAD
CO	80111	NEWMONT MINING CORP
AZ	85929	USDA FOREST SERVICES
AZ	86025	HB PORTER 4 LLC
AZ	85304	JAN U LARSEN
WI	53110	MARIO & BETH MANISCALCO
AZ	85937	NZ JOSEPH CITY LLC
AZ	85625	MARY PISEL E
AZ	86032	S & F INVESTMENTS LLC
AZ	85072	ARIZONA PUBLIC SERVICE COMPANY
TX	77210	EL PASO NATURAL GAS CO
TX	76161	BNSF RAILWAY COMPANY
NJ	7921	AT&T

# Hashknife Solar Energy Center

## INVITES YOU TO A PUBLIC OPEN HOUSE

Invenergy, LLC is conducting a public open house to provide information about the **Hashknife Solar Energy Center**, a proposed 300 megawatt (MW) solar facility in Navajo County, AZ. This solar facility would provide enough renewable energy to power approximately 70,000 homes.

The public is invited to attend the public open house to learn more about the project and ask questions of the project team.

*For more information or to submit comments:* [Slnnis@invenergyllc.com](mailto:Slnnis@invenergyllc.com)

**Invenergy** | Innovators building a sustainable world

**Wednesday, May 15, 2019**

**6:00 - 8:00 p.m.**

Joseph City Fire District  
4513 Main Street, Joseph City, AZ 86032



Learn about the innovative photovoltaic technology



Understand the benefits to you and the community



Review preliminary plans



Ask questions and provide feedback

Invenergy  
1401 17th Street, Suite 1100  
Denver, CO 80202

***All questions and comments are  
due to the team by May 31, 2019.***



*Invenergy drives innovation in energy.* Invenergy and its affiliated companies develop, own, and operate large-scale renewable and other sustainable energy generation and storage facilities in the Americas, Europe and Asia. Learn about Invenergy at [Invenergyllc.com](https://www.invenergy.com).



# Hashknife Solar Energy Center

The Hashknife Solar Energy Center is a proposed 300 megawatt solar power generation facility in Navajo County, AZ targeted to begin operations in 2023.



Enough electricity to power more than **70,000 homes**



**Millions of dollars** invested in the economy through taxes and land payments



**375 jobs** supported during construction



**3-5 full-time** operations and maintenance staff



Using the most up-to-date, innovative photovoltaic technology



**300 megawatts** of renewable energy



Supports local education, emergency & veteran services and environmental stewardship

## Project Timeline

2019–2021	2022	2023
<p><b>Development</b></p> <p>Activities include solar assessment, environmental studies, interconnection studies, permitting etc.</p>	<p><b>Construction</b></p> <p>Estimated ~6-8 months</p>	<p><b>Operation</b></p> <p>Target operational date with a project life of 20 years</p>



Invenergy's Grand Ridge Energy Center located in LaSalle County, Illinois.

## About Invenergy

Invenergy is America's leading, privately-held developer and operator of sustainable energy solutions.

A U.S. based company that develops, owns and operates clean energy facilities in the Americas, Europe and Asia.

Invenergy has successfully developed more than 146 projects, totaling over 22,600 megawatts, including wind, solar, natural gas power generation and advanced energy storage projects.



Invenergy

## Project Timeline

### Development

Navajo County Conditional Use & Special Use Permit Review.  
State Powerline Siting Committee Review.  
Civil site work beginning late 2019.

2019-2021

### Construction

*Expected to take ~6-8 months.*

2022

### Operation

2023

## Hashknife Solar Energy Center

# Invenergy

## Solar Construction



**Step 1:**  
Clearing,  
grading and  
fencing



**Step 2:**  
Pile drive  
racking posts



**Step 3:**  
Install fixed tilt  
racking system



**Step 4:**  
Trenches for  
collection line  
systems



**Step 5:**  
Install solar  
modules



**Step 6:**  
Install  
electrical  
collection  
system



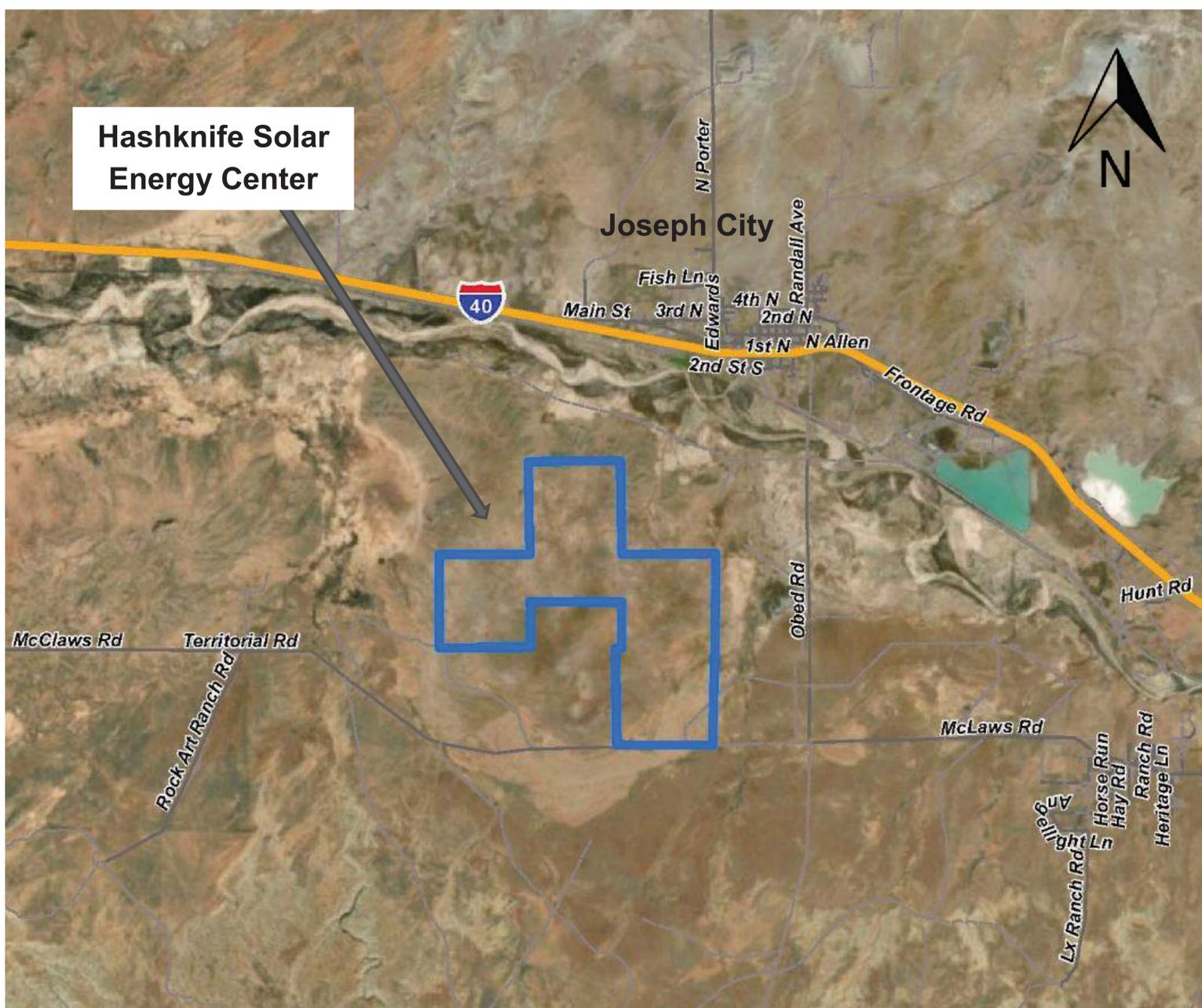
**Step 7:**  
Install inverter/  
transformer



**Step 8:**  
Solar farm is  
operational

## Project Location

The proposed Hashknife Solar Energy Center is located south of Joseph City, northwest of the corner of Obed Road and Territorial Road.



## Hashknife Solar Energy Center

# Invenergy

## Solar

**Harnessing the power of the sun to deliver low-cost, clean energy.**

For nearly a decade, Invenergy has applied its diverse energy experience and innovation to deliver solar solutions to customers worldwide. Today, according to Bloomberg, Invenergy is a top 5 North American solar developer,\* and our footprint extends worldwide.

Solar technology is simple and scalable; it is flexible and reliable. With costs that have decreased by nearly 90% in less than a decade, solar is now one of the least expensive and fastest growing sources of new energy generation in the world.

### Invenergy Solar: Low cost. High capacity. Tailored to your needs.

#### Projects

Operating, in construction & contracted

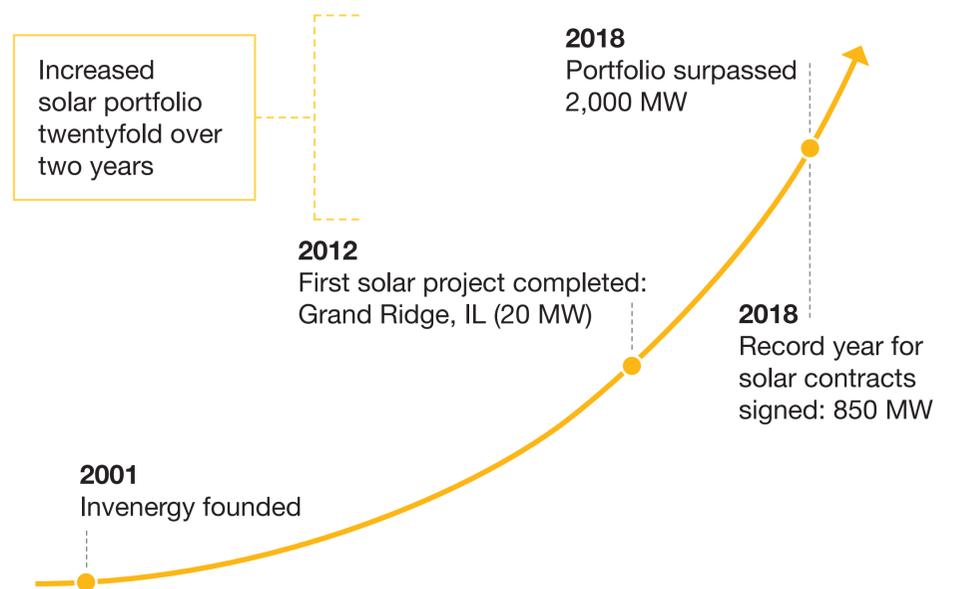
 **27**  
Projects

 **3,180**  
Megawatts

Development pipeline

 **30,000+**  
Megawatts

#### Capacity Growth



#### Innovative Solar Test Facility

Our new Brookfield solar test facility at Invenergy's award-winning Grand Ridge Energy Center in LaSalle County, IL features both monofacial and bifacial panels in various configurations. By analyzing different panels and configurations, we are able to optimize how panels perform in a utility setting.

#### Preferred Partner to Utilities & Corporate Customers



Dry Lake Solar (100 MW): Will deliver 90% of electricity demand for MGM properties on the Las Vegas strip



Badger Hollow (150 MW): Helping Wisconsin utilities WEC and MG&E meet their sustainability goals



Southern Oak (160 MW): Fueling Georgia Power's Renewable Energy Development Initiative